

# IMPLICATIONS OF DRAFT PLAN

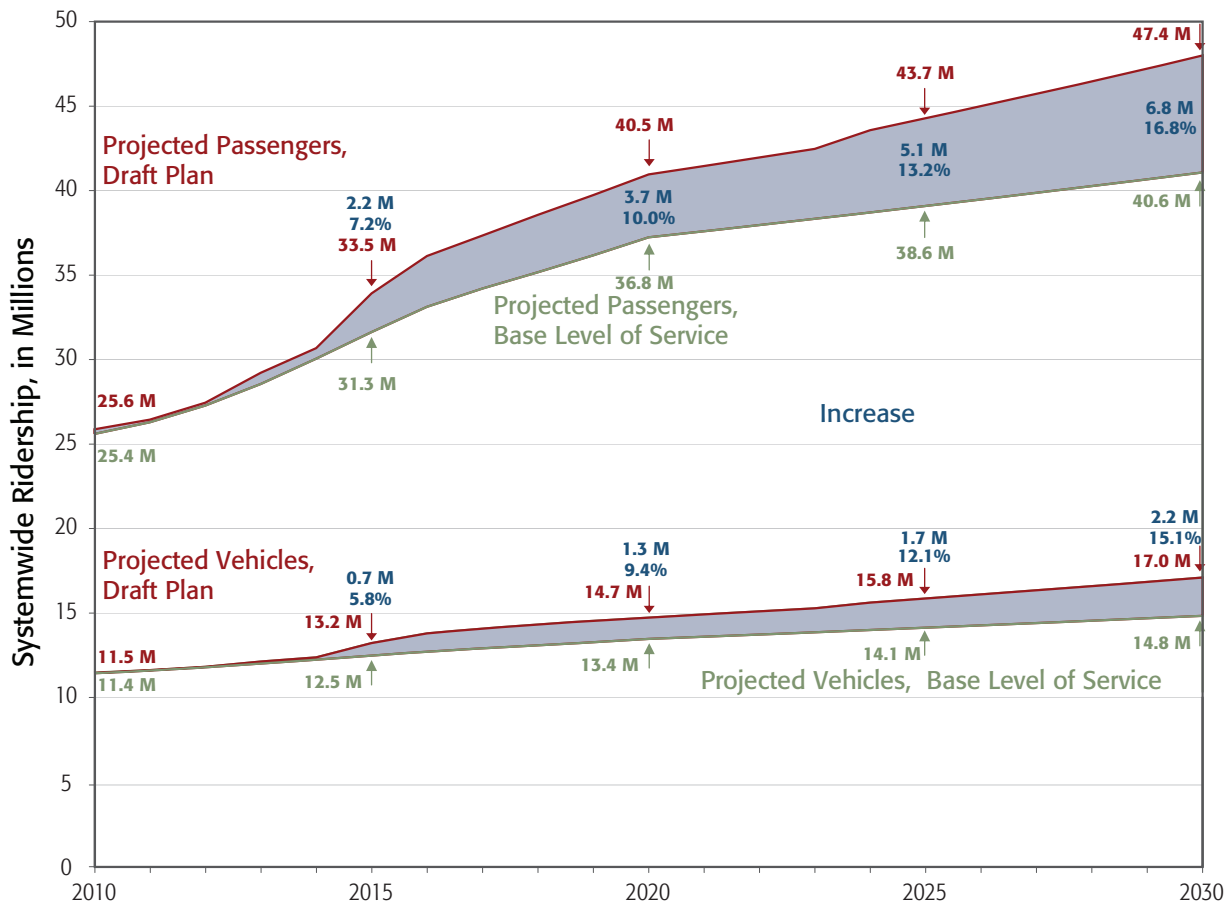
## 7. COST & SERVICE IMPACTS

This section examines how the service plan described in Section 6 performs in terms of LOS standards, as well as the operating and capital cost impacts of the Draft Plan.

### 7.1 How does ridership adjust to the service in the Draft Plan?

The service expansions proposed in the Draft Plan would increase service hours by 40% over the Base Level of Service. The more attractive service will result in higher capture rates of total cross-Sound trips, which is estimated to increase total ridership in 2030 by 6.8 million, or 16.8%. As shown in Exhibit 17, the additional trips drawn to WSF is estimated to grow as service is added, reaching more than 47 million trips in 2030. Exhibit 18 shows the breakdown of the 2030 projected ridership by route and by mode.

**Exhibit 17: Ridership Impacts of Expanded Services**



Source: Washington State Ferries and Berk & Associates, 2006



## Exhibit 18: Draft Plan Ridership by Route

	Vehicles		Walk-Ons		Total Passengers		Walk-On %	
	2003	2030	2003	2030	2003	2030	2003	2030
Pt. Defiance-Tahlequah	429,500	487,500	95,000	163,250	746,250	903,500	13%	18%
Southworth-Vashon	127,250	155,000	52,000	79,000	213,250	291,000	24%	27%
Fauntleroy-Vashon	1,122,250	1,704,750	230,750	407,750	1,959,250	3,073,000	12%	13%
Fauntleroy-Southworth	502,000	N/A	133,750	N/A	870,250	N/A	15%	N/A
Seattle-Southworth	N/A	1,473,250	N/A	1,393,000	N/A	3,993,000	N/A	35%
Seattle-Southworth (via Seattle-Vashon PO)*	N/A	N/A	101,000	N/A	101,000	N/A	100%	N/A
Seattle-Vashon Passenger-Only*	N/A	N/A	134,750	302,750	134,750	302,750	100%	100%
Seattle-Bremerton	662,750	2,041,250	1,560,500	3,876,250	2,711,000	7,541,250	58%	51%
Seattle-Bainbridge Island	2,352,000	2,741,000	2,827,000	5,408,500	7,027,000	10,123,500	40%	53%
Edmonds-Kingston	2,125,500	3,222,500	528,750	1,734,750	3,981,000	7,328,250	13%	24%
Seattle-Kingston Passenger-Only*	N/A	N/A	N/A	2,626,000	N/A	2,626,000	N/A	100%
Mukilteo-Clinton	2,197,500	3,207,750	499,500	1,291,750	4,028,250	6,655,750	12%	19%
Pt. Townsend-Keystone	371,250	530,500	102,500	181,500	791,750	1,173,000	13%	15%
Anacortes-San Juans	765,000	1,197,750	318,000	813,750	1,711,500	2,995,250	19%	27%
San Juans Inter-Island**	105,500	166,000	N/A	N/A	105,500	166,000	N/A	N/A
Sidney, B.C. International Route Legs	34,250	68,250	14,750	53,250	100,250	223,250	15%	24%
<b>TOTAL</b>	<b>10,794,750</b>	<b>16,995,500</b>	<b>6,598,250</b>	<b>18,331,500</b>	<b>24,481,000</b>	<b>47,395,500</b>	<b>27%</b>	<b>39%</b>

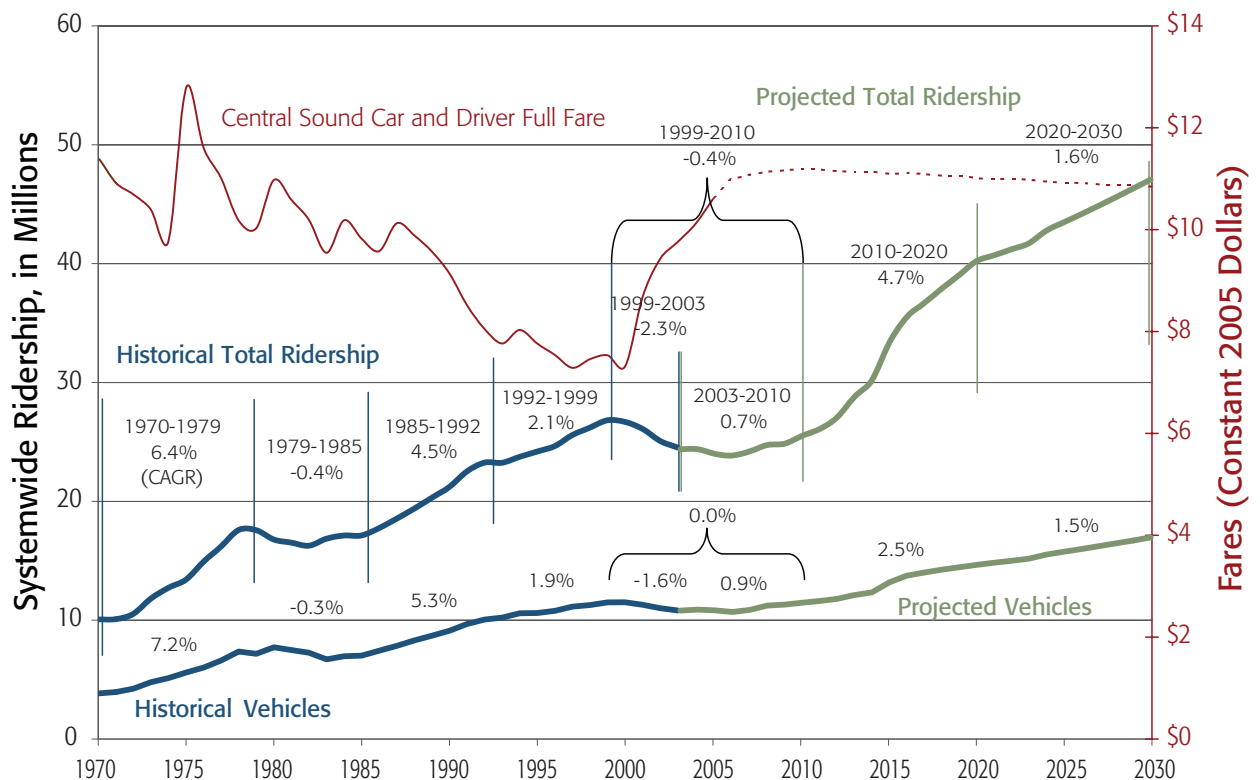
\*Seattle-Vashon and Seattle-Kingston Passenger-Only routes are assumed to be operated by an entity other than WSF. Because the majority of riders on these routes will use WSF if these PO services do not materialize, ridership figures are included.

\*\*Because there is no charge for passengers on San Juans Inter-Island routes, passenger ridership figures are not included.

Source: Washington State Ferries and Berk & Associates, 2006

To put the revised ridership projections into a historical context, Exhibit 19 is an updated version of an earlier graphic showing the higher ridership values and average annual growth rates in comparison with previous experience.

## Exhibit 19: Historical and Projected Systemwide Ridership Compound Annual Growth Rate (CAGR): Draft Plan



Source: Washington State Ferries and Berk & Associates, 2006

## 7.2 Does the Draft Plan meet the Commission Service Standards?

As Exhibits 20 and 21 show, even with higher ridership levels, the Draft Plan achieves the goal of lowering average wait times to levels near or below the WSTC maximum congestion delay standards on most routes. There are exceptions, however: the Seattle-Bainbridge and Seattle-Bremerton routes are projected to exceed their vehicle wait-time standards by 12-43 minutes in 2030. This reflects the fact that in several areas the Draft Plan takes the ferry system up near its physical limits, including limits imposed by terminals, connecting highway infrastructure and even maritime geography. In light of these constraints, the Draft Plan represents WSF's best effort to meet projected growth in ridership.

It is also worth noting two important ways in which the Draft Plan describes a future that is not fixed, but flexible. First, rider behavior will be flexible, especially across the routes that serve the Kitsap travel shed: Edmonds-Kingston, Seattle-Bainbridge, Seattle-Bremerton, and Seattle-Southworth. WSF's transportation model projects how Kitsap riders would "balance" themselves across these routes, dynamically reacting to the prospect of a longer trip time on one route by shifting to another.

There are limits to a model's ability to project dynamic balancing, however, so WSF also analyzed the Draft Plan across the entire Kitsap Travel shed (including Southworth as well as Bremerton, Bainbridge and Kingston). On a travel shed basis, the Draft Plan would provide almost enough capacity to meet demand on all Kitsap routes at the maximum level of congestion delay.

### How is Southworth-Seattle treated in the level-of-service analysis?

Since the proposed Southworth-Seattle route is a new route, there is no current Commission adopted congestion standard.

The Draft Plan proposes using the same approach to setting the Southworth-Seattle standard as was used in setting the Bremerton and Bainbridge routes.

Namely that the standard maximum wait time should be set such that total travel time (wait time plus crossing time) is the same for all routes. Following this logic the standard would be 100 minutes, the same as the Seattle-Bainbridge route.

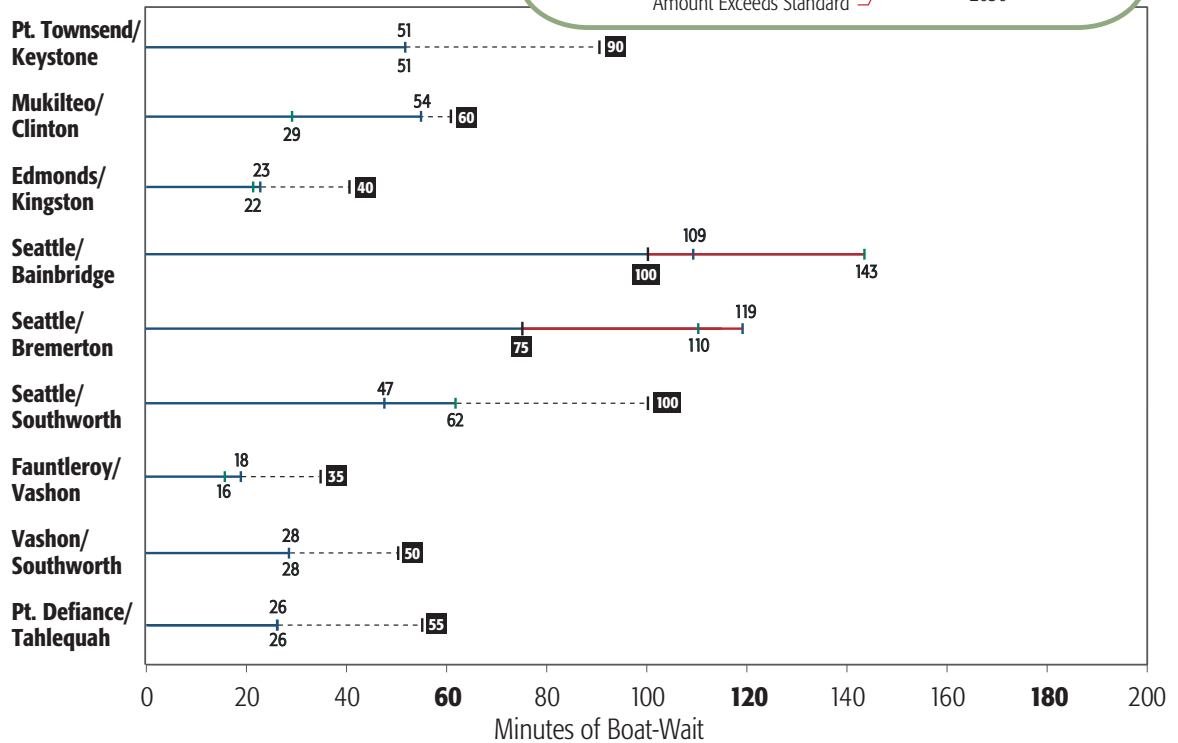
Since all 3 routes would be operating out of Colman Dock, it is desirable to set the standard such that no one route is favored over another.

### Current and Re-Stated Service Standards for May Weekday Vehicle Traffic (4 hour PM Peak)

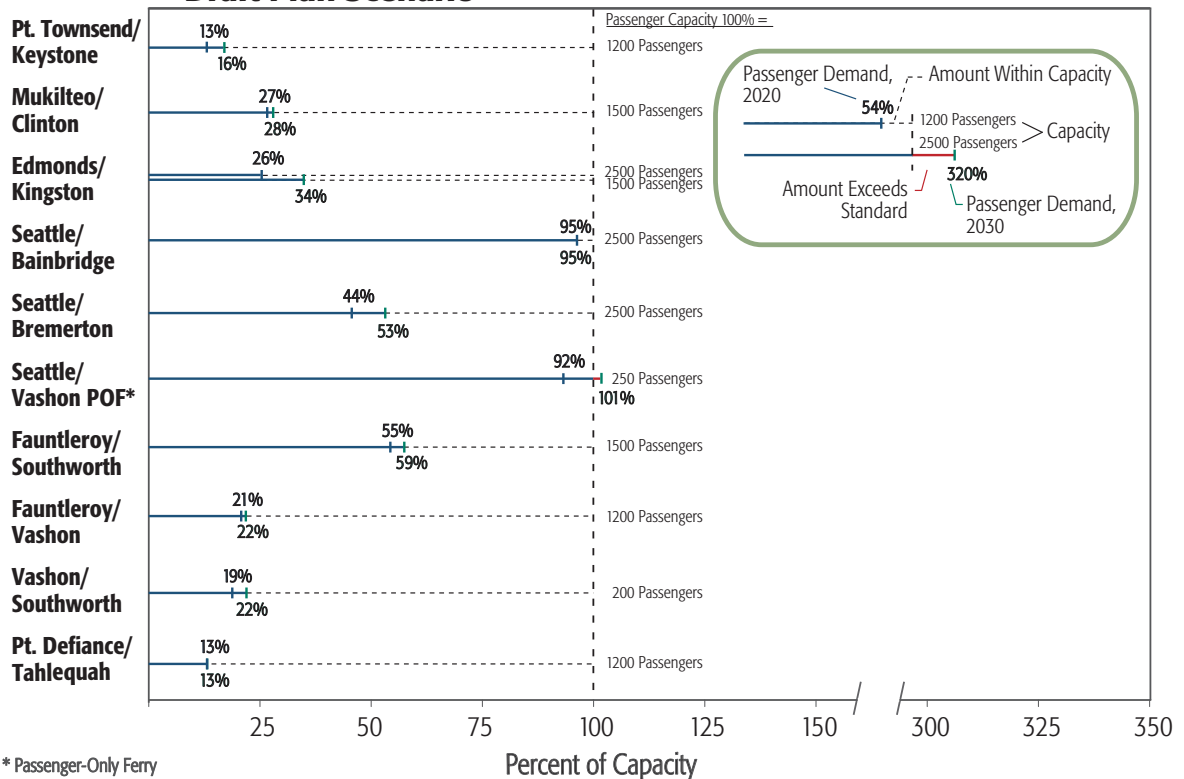
Route	Current WSTC Standard: Boat-Waits	Re-Stated WSTC Standard: Minutes
Mukilteo-Clinton	2	60
Port Townsend-Keystone	1	90
Edmonds-Kingston	1	40
Seattle-Bainbridge	2	100
Seattle-Bremerton	1	75
Fauntleroy-Vashon	1	35
Fauntleroy-Southworth	1	45
Seattle-Southworth	N/A	100
Pt. Defiance-Tahlequah	1	55



## Exhibit 20: Vehicle Boat-Wait, Draft Plan Scenario



## Exhibit 21: Passenger Demand as Percent of Capacity, Draft Plan Scenario



Source: Washington State Ferries and Berk & Associates, 2006

## 7.3 Is the Plan flexible to adjust to future changes?

Flexibility is also built into the Draft Plan itself. While the Plan was designed as WSF's best means of accommodating the projected future growth in ridership, this growth reflects changes in demographics and regional travel patterns that may or may not come to be. For example, peak demand on Central Sound routes could be lower if employment growth in Kitsap was greater than projected. On the other hand, as the Evergreen Floating Bridge experience shows, employment growth in a suburban area may not reduce the demand for commute trips into the CBD.

In recognition of that fact, the Plan has been designed to be flexible — equipped to handle as much of the projected growth as possible, but capable of being scaled back to avoid over investment if that growth does not materialize. Flexibility is possible because the vessels scheduled for purchase in the first and third decades of the planning period will primarily replace retiring vessels, while the majority of vessels needed for expansion are not scheduled until the second decade.

This schedule will allow WSF to observe real ridership growth until a decision point in approximately 2010 before deciding what service enhancements are really necessary.

## 7.3 What are the Draft Plan's terminal and vessel implications?

### 7.3.1 What are the vessel implications of the Plan?

Planning for service changes inevitably goes hand-in-hand with planning for fleet capital program: which vessels need to be retired, which ones need to be purchased, what modifications can be done to existing boats to improve their design? The fleet needs to be appropriately configured to handle increased service levels. Some of the boats in the current fleet were constructed as early as 1927, and, even though they were updated through the years, they are nearing the end of their useful life.

### How Well Does the Draft Plan Meet Kitsap Travel Shed Vehicle Demand?

The Draft Plan calls for adding service to Seattle-Bremerton, Seattle-Southworth and Edmonds-Kingston to address growth throughout the Kitsap travel shed. The Draft Plan also expects that Seattle-Kingston passenger-only service will be developed sufficiently to divert some of the demand for walk-on passengers away from Bainbridge Island.

Even with these improvements, the Commission's LOS standards for vehicle trips are not met at Seattle-Bremerton and Seattle-Bainbridge. By 2030, demand at Seattle-Bainbridge is projected to be 116% of capacity and demand at Seattle-Bremerton is projected to be 122% of capacity. However, demand on both the Seattle-Southworth and Edmonds-Kingston routes is less than capacity on those routes (89% of capacity at Edmonds, 86% at Southworth).

Over the entire Kitsap travel shed, vehicle demand is nearly identical to capacity under LOS standards. By 2030, that demand is 103% of capacity.

### 4-Hour Kitsap Travel Shed Vehicle Demand vs. Capacity Under LOS Standards, 2030 Draft Plan

	Capacity Under LOS Standards	Demand Under Draft Plan	
		Vehicles	% of Capacity
Edmonds-Kingston	1759	1567	89
Seattle-Bainbridge	1384	1601	116
Seattle-Bremerton	1124	1374	122
Seattle-Southworth	992	855	86
<b>TOTAL</b>	<b>5259</b>	<b>5397</b>	<b>103</b>



The current WSF fleet includes 24 passenger-vehicle vessels and four passenger-only vessels.

- Jumbo Mark II ferries are the newest and largest in the fleet, and carry over 200 cars. These vessels were built in the late 1990s and include the Wenatchee, Puyallup, and Tacoma.
- The next largest ferries, of the Super and Jumbo Classes, carry 140 to 190 cars and were built in later 1960s and early 1970s. These include the Spokane, Walla Walla, Hyak, Yakima, Elwha, and Kaleetan.
- The Issaquah Class vessels, built in 1980s, carry 90 to 120 cars and include the Issaquah, Chelan, Sealth, Kitsap, Kittitas, and the Cathlamet. The Evergreen Class carries 90 cars and includes the Evergreen State, Klahowya, and Tillikum. These vessels were originally built in the later 1950s.
- Six smaller ferries, Rhododendron, Hiyu, and the Steel Electric Class which includes Illahee, Nisqually, Quinault, and Klickitat carry 40 to 65 cars. Steel Electric Class vessels are the oldest in the system; they were originally built in 1927.
- Four passenger-only vessels include Passenger-Only Ferries, Skagit and Kalama, which can carry 250 passengers and Passenger Only Fast Ferries, capable of transporting 350 people.

As Steel Electrics are nearing the end of their useful life and need to be retired, WSF needs to plan for purchasing new vessels. There are a number of factors to consider when planning for new vessels: appropriate size in relation to demand on the route, vessel speed, cycle time (time it takes for a complete round trip including loading and unloading), and terminal infrastructure.

Besides their old age, Steel Electrics are also relatively slow and small; Issaquah class vessels have proved to be the most versatile for the WSF system routes. Jumbo Mark II boats are newest in the system, but their size, while useful for transporting large number of vehicles, precludes them from accessing most of the WSF terminals. Without having to modify the existing harbor and terminal facilities, these vessels can only be used on Edmonds-Kingston, Seattle-Bainbridge and Seattle-Bremerton routes.

WSF is moving in the direction of standardizing its fleet. One of the advantages of standardization is the interchangeability of boats—the ability of easily moving vessels throughout the system. When a vessel is in maintenance or repairs, it is easy to substitute another one of the same design. Having a standard sized vessel fleet would also reduce operating and maintenance costs.

All of the new vehicle-passenger boats will be of the same class—Expanded Issaquah—and will have a car carrying capacity of 144 cars and capacity for 1,500 passengers. Using the Issaquah class as a base design reduces costs and provides needed flexibility, since this size vessel is the most versatile and can be used throughout the ferry system. These new vessels can be easily interchangeable



with existing Issaquah class ferries as well as Super class vessels (until their scheduled retirement).

The first vessel built usually bears the highest cost, as more resources are spent on design and factory settings; however, due to improved process efficiencies, each of the next vessels built within the same order will cost less than the preceding one. To take advantage of this trend, the new vessels will be built in flights, each including four to six boats, strategically timed for planned service improvement. Exhibit 22 details the vessel procurement plan and corresponding service changes.

## Exhibit 22: Timing of Vessel Procurements Necessary to Implement the Draft Plan

	Procurement 1 2006-2013	Procurement 2 2014-2021	Procurement 3 2022-2030
<b>Draft Plan</b>	<ul style="list-style-type: none"> <li>4 Expanded Issaquah</li> </ul>	<ul style="list-style-type: none"> <li>4 Expanded Issaquah</li> <li>Modify 3 Jumbo Mark II</li> </ul>	<ul style="list-style-type: none"> <li>6 Expanded Issaquah</li> </ul>
<b>Service Changes</b>	<ul style="list-style-type: none"> <li>3 Replacements</li> <li>3-vessel Kingston</li> </ul>	<ul style="list-style-type: none"> <li>2-vessel Seattle-Southworth</li> <li>3-vessel Bremerton</li> <li>6-vessel San Juan</li> <li>1 Replacement</li> </ul>	<ul style="list-style-type: none"> <li>4 Replacements</li> <li>4-vessel Kingston</li> <li>3-vessel Mukilteo</li> <li>2-vessel Keystone (Summer)</li> </ul>

Source: Washington State Ferries and Berk & Associates, 2006

**2006-2013: First vessel procurement.** Four new Expanded Issaquah class vessels will be purchased. This purchase has been approved by the Legislature and the new vessel construction is expected to begin in 2006. During the same time horizon, WSF will retire all four Steel Electric class vessels, and one Evergreen State. Three of the new vessels will be replacements for the retired boats, and another vessel will allow the expansion of the two-vessel Edmonds-Kingston route to three-vessel operation. This is made possible by delaying the retirement of the Rhododendron to the year 2015. All of the passenger-only vessels will be sold or retired (Chinook and Snohomish by the end of 2007 and Skagit and Kalama when WSF exits the passenger-only business, during the same time frame).

**2014-2021: Second vessel procurement.** WSF will purchase four new Expanded Issaquah class vessels, for use in planned service expansions (second vessel to Southworth, third vessel to Bremerton, and sixth vessel to San Juans) and replacement of Rhododendron. Additionally, one Super class vessel will be retired.

**2019:** WSF will expand three Jumbo Mark II class vessels to increase passenger seating capacity on the Seattle-Bainbridge route.

**2022-2030: Third vessel procurement.** Six new Expanded Issaquah class vessels will be purchased for planned service expansions (fourth vessel on



Edmonds-Kingston, third vessel at Mukilteo, and second vessel on Port Townsend-Keystone in summers), as well as for replacement of the following boats: one Evergreen State class and remaining three Super class vessels.

## 7.3.2 What are the terminal implications?

Regular service on WSF routes is dependent on adequate preservation of the existing terminals. Similarly, service improvements such as additions of vessels to the existing routes, increasing the capacity on the route by adding larger vessels, or addition of a new route to an existing terminal, are all dependent on the successful implementation of WSF's terminal development program.

The impact on terminals and terminal planning is summarized in Exhibit 23, which presents the growth in traffic during the peak weekday period and during the peak hour within the peak period. The table shows volumes moving through the departure and arrival terminals for the afternoon commute period on the principal commuter routes and focuses on vehicles and walk-ons since these modes of access will have terminal implications. The number of in-vehicle passengers is not included in the table.

The four-hour commute period is one of the key factors in sizing terminal facilities. The following are the significant traffic changes that will have an impact on terminals and terminal planning:

- Vehicle trips through these commuter corridors are projected to increase by another 3,100 by 2030 or approximately 60% during the 4-hour period.

**Exhibit 23: Principal Commuter Routes, Westbound PM Ridership**

	Vehicles				Walk-Ons			
	4-Hr Peak		Peak Hr		4-Hr Peak		Peak Hr	
	2003	2030	2003	2030	2003	2030	2003	2030
<b>Departure Terminals</b>								
<b>Pt. Defiance</b>	260	290	90	100	60	140	20	50
<b>Vashon</b>	70	80	20	30	10	30	5	10
<b>Fauntleroy</b>	990	980	310	310	400	570	130	180
<i>To Vashon</i>	670	980			250	570		
<i>To Southworth</i>	320	0			150	0		
<b>Colman Dock</b>	1,630	3,830	610	1,430	4,570	13,070	1,710	4,880
<i>To Bainbridge</i>	1,280	1,600			3,050	7,190		
<i>To Bremerton</i>	350	1,370			1,520	3,630		
<i>To Southworth</i>	0	860			0	2,250		
<b>Edmonds</b>	1,080	1,570	380	560	480	2,240	170	790
<b>Mukilteo</b>	1,250	1,700	360	500	530	1,790	150	520
<b>Arrival Terminals</b>								
<b>Tahlequah</b>	260	290	90	100	60	140	20	50
<b>Vashon</b>	740	1,060	250	350	260	600	90	200
<b>Southworth</b>	320	860	100	270	150	2,250	50	720
<b>Bremerton</b>	350	1,370	140	550	1,520	3,630	600	1,440
<b>Bainbridge</b>	1,280	1,600	500	630	3,050	7,190	1,200	2,830
<b>Kingston</b>	1,080	1,570	380	560	480	2,240	170	790
<b>Clinton</b>	1,250	1,700	360	500	530	1,790	150	520

Source: Washington State Ferries and Berk & Associates, 2006



- Walk-on trips are projected to increase by approximately 12,000, which is almost three times the current volume.
- The majority of the increase in volume is expected to be in the walk-on category, in particular the routes operating out of Colman Dock, where 72% of all new walk-on trips are expected.
- Edmonds-Kingston and Mukilteo-Clinton routes, which currently do not have significant walk-on numbers, are projected to increase dramatically and reach levels that are even beyond current Seattle-Bremerton traffic.
- Approximately 70% of the new vehicle trips (2,200 trips) during the peak period are expected to be on routes operating out of Colman Dock. These new trips are projected to be distributed with 15% destined for Bainbridge Island, 45% to Bremerton and 40% to Southworth.
- As a result of shifting the Southworth traffic to Colman Dock, the vehicle traffic using Fauntleroy is projected to be marginally lower in 2030 than it was in 2003.

While this level of traffic growth will need to be considered as part of the ongoing terminal development program, the overall level of traffic is generally consistent with planning-level estimates used for terminal planning to date. The timing of terminal improvements is especially critical, and has to be coordinated with service changes well in advance. The following are the major terminal improvements that are in plan development that will support the Draft Plan service improvements.

**Anacortes.** WSF is remodeling the Anacortes Terminal to add multimodal connections, improving the way all modes of travel move on the site by enhancing vehicle, bicycle, and pedestrian access. A third slip will be added by 2011 to maintain schedule reliability and service flexibility, and tie-up slips will be relocated to ready the slips for larger vessels in the future. The terminal will be complete by 2015.

**Edmonds.** The Edmonds Terminal is situated at the convergence of ferry, highway, and rail corridors, and WSF is remodeling this terminal to ease connections among these different modes. The project includes a new terminal building, two additional slips, overhead pedestrian loading, and a variety of remodeled connections to other modes of travel, and it is scheduled for completion by 2017.

**Mukilteo.** The Mukilteo Multimodal terminal, scheduled for completion by 2010, is another facility with multiple connections to other modes of travel. The project will involve relocating the existing terminal, building a new terminal building which will connect via an overhead pedestrian bridge to the Sounder station and the bus transit center. Also the holding capacity will be expanded and a total of three slips provided.

**Clinton.** WSF is adding a third slip and overhead loading to the Clinton Terminal by 2015.

### How does the Draft Plan affect the Multimodal Terminal program?

Washington State Ferries has been planning for significant terminal investments to upgrade and expand facilities at Seattle, Bainbridge Island, Edmonds, Mukilteo and Anacortes.

Planning work for these projects has been largely based on the 1999 WSF Long Range Plan, which estimated total annual ridership of 38 million by 2015, a level that is not expected until 2020 in this Draft Plan.

In general, the multimodal plans are consistent with the service needs of the Draft Plan. All of the major elements, such as number of slips and timing of improvements are supportive of the proposed service plan.

However, the updated information about demand and in particular ridership expectations beyond 2020, may influence the ultimate terminal configuration as each project moves through the design and environmental review process.



**Southworth.** WSF is adding a second slip to Southworth Terminal by 2010.

**Bainbridge.** WSF is expanding Bainbridge Terminal not because of any plans to add service, but simply to accommodate the rapid growth in the volume of traffic flowing through this terminal.

**Colman Dock.** The Draft Plan has multiple implications for Colman Dock, whose terminal plan currently calls for a remodeled terminal and a potential fourth slip by 2014. The fourth slip will be a desirable element in the implementation of the breakup of the South Sound triangle and the redirecting of Southworth service to Colman Dock. With four slips, three would be used for the Bainbridge, Bremerton, and Southworth routes, with a backup slip to ensure schedule reliability.

Since Colman Dock operates in a congested environment and has constraints related to the size of its vehicle holding area, and related to the waterfront street network, WSF developed a service plan that sought to minimize impacts on the infrastructure while addressing the growth in demand for service through Colman Dock.

By placing three vessels on Seattle-Bremerton and two on Seattle-Bainbridge and Seattle-Southworth, WSF equalized the three routes' headways at 50 minutes. The benefit of equivalent headways is an evenly spaced arrival schedule, with vessels arriving and departing approximately every 15-20 minutes. This schedule evens out the flow of vehicles into the holding area and the departure rate of vehicles and passengers into Downtown Seattle, leading to a steady, predictable rate of traffic coming in and out of Colman Dock, and as little impact as possible to the Seattle street network.

It should be noted that this effectively maximizes the arrivals and departures to Colman Dock for passenger-vehicle ferries. Adding more vessels to any route would result in two vessels arriving at the same time, which would compound traffic impacts around the terminal.

It is also important to note that WSF expects the vast majority of the ridership growth flowing through Colman Dock to board as walk-on passengers. Total westbound ridership through Colman Dock during a commute period is expected to increase from approximately 7,500 in 2003 to 19,500 in 2030. These ridership figures do not include the potential impact of non-WSF passenger-only services which may or may not seek to use Colman Dock.

Of those 12,000 additional riders, however, 70% will walk onto WSF vessels, shifting the overall share of walk-on passengers through Colman Dock from 60% in 2003 to 67% in 2030.

Average occupancy in the vehicles using Colman Dock is projected to decrease slightly, from 1.8 to 1.7. The likely cause for this small shift is the substantial

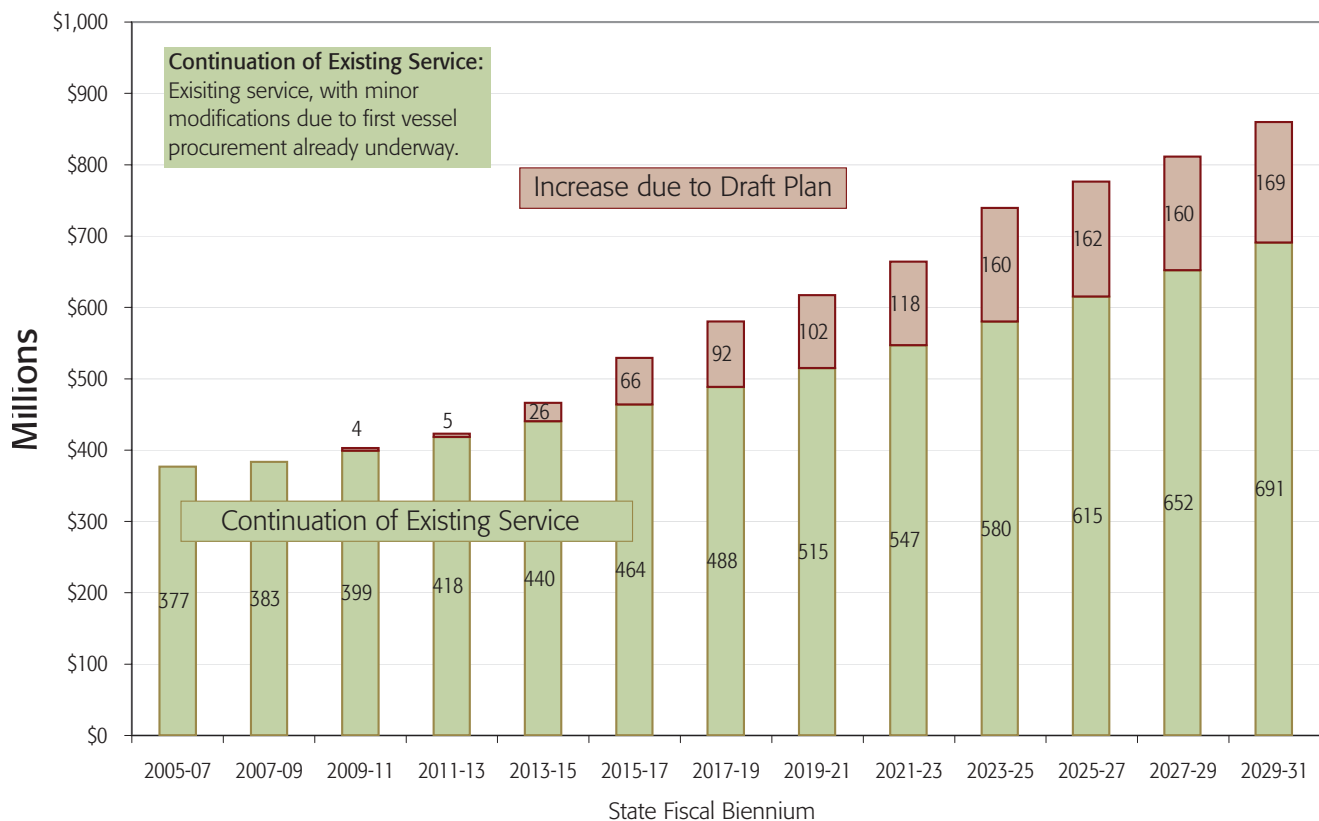
growth in walk-ons. With more transit options available to travelers, riders who formerly travelled as passengers in cars will be able to shift into the walk-on mode.

## 7.4 How much will the Draft Plan operation cost?

Service improvements have operating cost implications that must be considered in the Long Range Plan. As the Draft Plan's service changes take place and a number of newly procured vessels start running on new and existing routes, the operating costs will increase. Operating and maintenance (O&M) costs include: deck labor, engine labor, fuel, terminal expenses, maintenance, and management and support costs.

Exhibit 24 presents the estimated O&M costs for the Draft Plan per biennium, including a breakout of the additional cost for the expanded services. As shown, the expansions called for in the Draft Plan result in gradual increase in operating

**Exhibit 24 : Operating & Maintenance Costs** (Year of Expenditure Dollars, in Millions)



Source: Washington State Ferries and Berk & Associates, 2006



costs beyond the cost of the Base Level of Service, starting in the 2009-11 fiscal biennium. The total cost of the additional service adds approximately \$1.1 billion over the planning horizon, a 16.2% increase over the Base Level of Service.

### **7.4.1 How are operating cost estimates prepared?**

All the other operating expenses, including direct vessel and terminal costs, as well as maintenance expenses, are projected to increase at an assumed annual rate of 3.0% to account for cost of living impacts including general inflation. Service costs are estimated on a per hour of service basis and multiplied by the number of service hours per schedule season. As a result, costs increase due to both inflationary pressures and the increases in service hours as called for in the Draft Plan.

One of the major operating cost assumptions is the fuel cost. The fuel expenditures are based on the February 2006 forecast of crude oil prices. The forecast projects the cost of oil to decrease in the near future (through fiscal year 2013) and remain relatively stable thereafter.

### **7.5 What are the capital investment needs of the Draft Plan?**

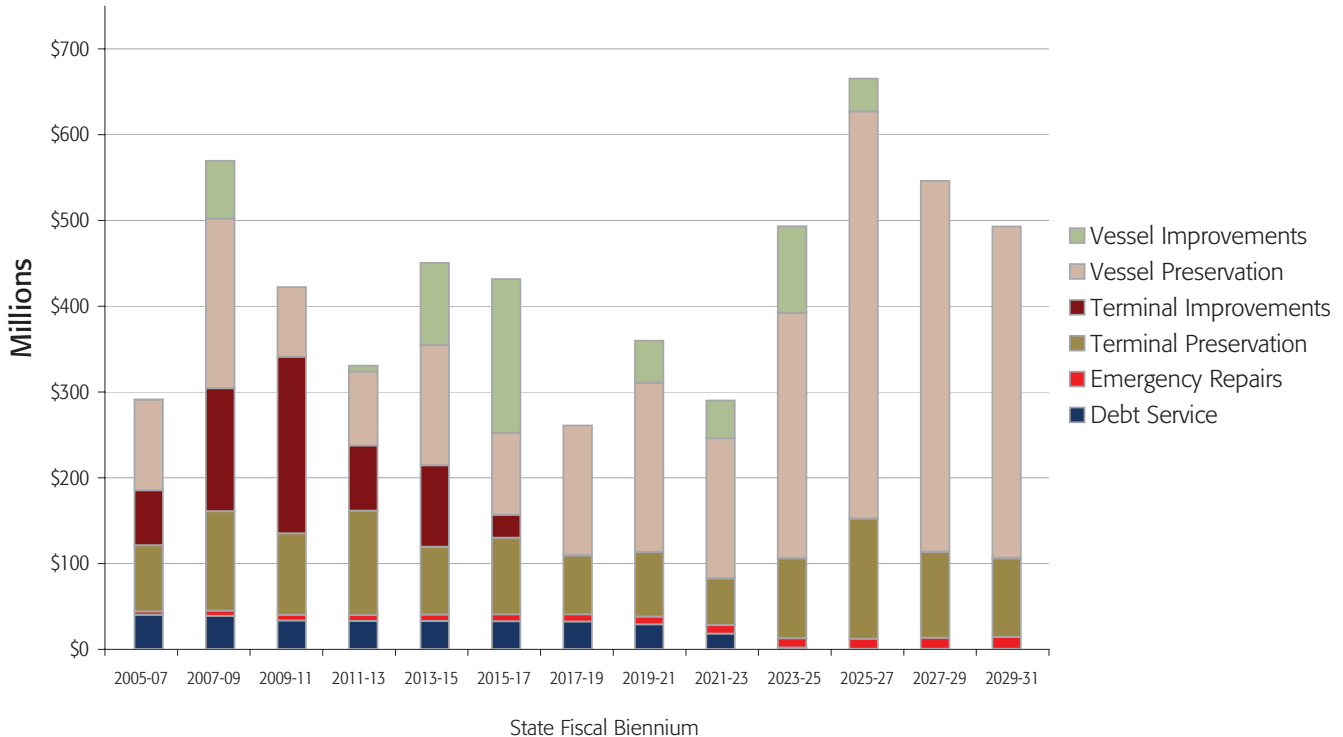
The capital investment required to (1) maintain the existing fleet and facilities and (2) deliver the new vessels and terminal improvements, as outlined in the Draft Plan, would total approximately \$5.3 billion over the next twenty five years (in year of expenditure dollars by biennium). The investments are categorized into Preservation and Improvements, which in turn are divided into vessel- and terminal-related components.

Preservation investments protect WSF infrastructure by keeping the vessels and terminals in safe and efficient operating condition. This is accomplished by following two approaches: (1) replacing and refurbishing components of vessels or terminals based on life cycle analysis, or (2) replacing entire terminal and vessel systems when they reach their end cycles. Sometimes, however, new construction is necessary to increase the capacity of a given route or terminal, which would classify this expense as an Improvement rather than Preservation.

Exhibit 25 demonstrates the break-down of various components of the capital program. All of the vessel procurements are mixtures of vessel preservations and improvements and assume the new Expanded Issaquah Class vessels (144 vehicles). The first vessel procurement, totaling \$286.5 million in dollars inflated to the biennium of expenditure, is intended to replace three ageing vessels and add service on Edmonds-Kingston route.

The second procurement is designed for service expansions at Seattle-Southworth, Seattle-Bremerton, and San Juan Islands routes, as well as replacement of old

**Exhibit 25: WSF LRSP Capital Program by Biennium** (Year of Expenditure Dollars, in Millions)



NOTE: numbers are out of date and will be revised when the capital model is updated.  
Source: Washington State Ferries and Berk & Associates, 2006

boats, at a cost of \$336.9 M. The third vessel purchase is also a mixture of route expansions and replacements, with expansions coming on Edmonds-Kingston, Mukilteo-Clinton and Pt. Townsend-Keystone routes. The third procurement is for six vessels and is estimated to cost \$722.6 M.

Regular service on WSF routes is dependent on adequate preservation of the existing terminals. Major terminal improvements can take years, so it is essential to plan for proper timeframe encompassing both terminal and service changes. In the Draft Plan, \$1,202.2 million is planned for terminal preservation and \$614.4 million for terminal improvements. Terminal improvements include a second slip at Southworth and new terminal at Edmonds; a third slip at Clinton; a new passenger only terminal at Kingston; and a third slip at Anacortes.

The Draft Plan assumes the successful implementation of the multimodal terminal projects and other terminal investments that are planned. The following are the investment needs (in year of expenditure dollars \$YOE) for the major terminal projects needed to support the proposed service plan:

- The overall cost of the Anacortes Multimodal project is estimated at \$178.6 million in year-of-expenditure dollars (\$YOE). The latest legislative capital commitment funds approximately half of this project's cost.
- The Edmonds Multimodal project is estimated to cost \$113.9 million

## What Are Capron Funds?

In the 1930s, the Legislature instituted Capron Refunds law, requiring all the gas tax and motor vehicle excise tax money collected in counties containing neither state highways nor fixed connections with the mainland to be returned to the county and shared with cities. The only counties to receive Capron Refunds are San Juan and Island counties; the former is allowed to keep 100 percent of gas taxes and motor vehicle registration fees, and the latter 50 percent.



(\$YOE). About a third of this cost is covered by the legislative capital commitment.

- Clinton third slip and overhead loading is estimated to cost \$44.1 million (\$YOE). Approximately two thirds of this cost is covered by the legislative capital commitment.
- Colman Dock redevelopment is estimated to cost \$241.6 million (\$YOE). Legislative capital commitment funds make up approximately 90% of this cost.
- Redevelopment of the Bainbridge Terminal is estimated to cost \$200.8 million (\$YOE), and will include expanding the holding area and the terminal building. More than two thirds of this cost is covered by the legislative capital commitment.
- The Southworth second slip and other improvements are estimated to cost \$54.7 million (\$YOE). The latest legislative capital commitment funds approximately half of this project's cost.
- The Mukilteo Multimodal project will cost \$131.2 million (\$YOE). Almost all of this project's cost is covered by the legislative capital commitment.
- The Draft Plan assumes Keystone Terminal improvements will total \$31.4 M, however this number is subject to change pending the outcome of the Keystone Harbor Study. Almost all of this estimated cost is covered by the legislative capital commitment.

Two somewhat smaller components of the capital program are funding for emergency repairs and payment of debt service. Emergency repairs address unanticipated damage to vessels or facilities and WSF needs to budget for these emergency funds at all times; \$116.2 million is budgeted for emergency repairs over the planning horizon. The debt service is scheduled to be paid off by 2023-25 fiscal biennium.

Preservation of terminals and vessels is an on-going matter and takes priority over improvements. New vessels purchased in the earlier years of the Plan will start needing preservation within the plan horizon.



## 8. FUNDING IMPLICATIONS

Having defined both the operating and capital investment funding needs, a conceptual funding plan can be developed. The framework used for the development of the funding plan is largely built on the planning assumptions used in the development of the current WSF 10-year Financial Plan. The Plan assumes that existing dedicated taxes for ferry operations and capital programs will continue at their current law levels.

The operating program is assumed to be funded primarily through fares, plus WSF receives dedicated tax support. The long-term fare policy assumption is that fares will increase 6% in 2006 and then increase annually at a rate of 2.5%, a fare program recently endorsed by the Legislature.

A new source of dedicated tax support is assumed for the Draft Plan, as a share of the "Capron Funds" is expected to be dedicated to future ferry operations. Per 2006 Legislative direction, the fuel taxes and fees collected from the additional gas taxes levied in 2003 and 2005 (2003 Nickel Package and 2005 Transportation Partnership Account) in San Juan and Island counties would not be refunded to these counties as per the Capron Refunds law, but instead would be made available for WSF operations.

If the sum of dedicated taxes, fare revenue and concession income exceeds the cost of operation in any year, there would be excess operating subsidy in that year. The Draft Plan assumes that if the operating program were to generate excess subsidy, that subsidy will be made available to fund capital projects. Annual inflationary fare increases of 2.5% are assumed to continue so long as there are either operating or capital funding needs.

In addition to dedicated ferry taxes for capital needs, the capital program will be funded by a combination of Motor Vehicle Account funds, Nickel gas tax and Partnership Account taxes, federal funds and any excess subsidies from operations.

The Nickel and Partnership Account taxes (2005 gas tax increase) will fund specific projects identified by the Legislature at the time these gas tax increases were approved. Motor Vehicle Account funding is assumed to continue to make up any shortfall in the preservation program as defined by the Legislative commitment in the 10-Year Financial Plan.

### 8.1 How will operations be funded?

Fare revenues collected from sales of ferry tickets are the major source of operations funding. There is a direct relationship between the ridership demand and fare revenues, and in turn, there is an inverse relationship between fare



Farebox Recovery Targets

The Joint Legislative Task Force on Ferries (JTFF) recommended that revenue from operations (ferry fares and concessions) fund a minimum of 80% of the operating program.

The Governor’s Blue Ribbon Task Force on Transportation, supported the 80% target, but suggested a long-term goal of 90% cost recovery.

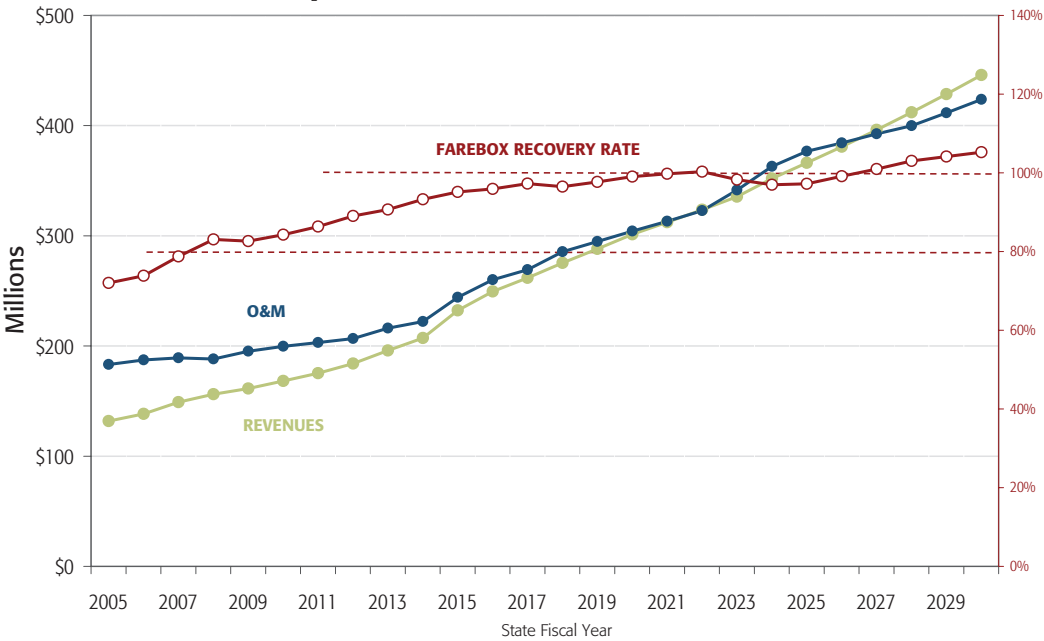
prices and ridership. The current assumed fare policy dictates a 6% annual fare increase in 2006, with annual increases of 2.5% thereafter.

Fares have become an even more vital element of operating funding since WSF lost its dedicated Motor Vehicle Excise Tax. In 1999 state voters approved Initiative 695 which would have reduced the WSF funding available from the MVET resulting in a loss of approximately 20% of WSF’s operating revenues (58% of the dedicated tax support for operations) and approximately 79% of its dedicated capital funds. While the Initiative was ruled unconstitutional, the Legislature enacted the MVET changes in 2000.

The current State operating subsidy is comprised of revenues from a variety of sources: dedicated motor fuel tax, motor vehicle registration fees, and licensing fees, discretionary taxes and fees from Motor Vehicle Fund, and multimodal taxes. A small portion of WSF operating funds also comes from concessions and other miscellaneous operating revenue. The Draft Plan assumes that fiscal 2007 will be the first year for the new Capron funds subsidy, which is estimated to generate approximately \$8 million in the 2007-09 state fiscal biennium.

Any tax revenue in excess of the amount necessary to fund the WSF operations is assumed to be transferred to capital program funding. This will be one of the assumptions that will be reviewed by the JTC Ferry Financing Study. Dedicated tax revenues account for approximately 15% of operating costs currently. However, since the gas tax is the primary source of tax support and gas taxes do not grow as much as inflation, the share of costs covered by dedicated taxes is projected to decline over time.

**Exhibit 26: Projected Draft Plan Scenario: Revenues, Costs, & Farebox Recovery** (Year of Expenditure Dollars, in Millions)



Source: Washington State Ferries and Berk & Associates, 2006

Exhibit 26 presents projected operating costs, operating revenues and the farebox recovery rate. With the fare and ridership assumptions in the Draft Plan, the farebox recovery rate is estimated to gradually increase from the current 75% to reach 100% in fiscal year 2022. This is the result of annual inflationary fare increases and the substantial growth in ridership expected over the next 15 years.

The increasing farebox recovery rates will generate excess subsidies of \$925.5 million over the life of the Draft Plan, which would be made available to fund capital investments.

## 8.2 How will capital projects be funded?

WSF's Capital Program is financed separately from the Operating Program through various public funding. The primary source of revenue is the Puget Sound Capital Construction Account which includes revenues generated by the motor fuel tax, federal grants, local funds, and bond proceeds. This account is used to pay for emergency repairs and vessel and terminal acquisition, construction, and improvements, and for repayment of bonds issued for these purposes. Multimodal taxes and fees provide additional funding.

The Puget Sound Capital Construction Account is assumed to cover preservation of vessels and terminals (including emergency repairs) and debt service; however, it excludes the cost of replacement vessels. The level of preservation investment is consistent with the recommendations of the Joint Legislative Task Force on Ferries (JTFF).

Given this Legislative direction, it is assumed that discretionary appropriations from Motor Vehicle Fund will be sufficient to cover any shortfalls when dedicated ferry taxes are insufficient to meet the JTFF level of preservation plus ferry debt service. The Motor Vehicle Fund combines revenues from motor fuel tax and other sources to fund highway projects. The other key sources of state tax support for the capital program include:

- In 2003 Legislature approved the "Nickel Package," a \$4.2 billion package of transportation improvements funded primarily from a 5¢ increase to the gas tax and other license fees. \$300 million was authorized for vessel and terminal construction activities.
- The 2005 Transportation Partnership Account package will fund \$8.5 billion for state transportation projects over the next 16 years. It will generate new revenue from three sources: increased fuel tax (9.5¢ gas tax increase), vehicle weight fees, and licenses and permits.

However, for WSF, the spending for both of these accounts is dedicated to specific projects: the "Nickel Package" and Transportation Partnership Account will pay for \$329.1 million of investments through the 2019-21 state fiscal biennium.

### JTFF Preservation Investment Recommendations

Short-term and long-term capital preservation requirements should be met in order to ensure the delivery of operating services. The Legislature should fund ferry capital such that ferry vessels and terminals can catch up and keep up with deferred life-cycle preservation and maintenance needs and replace aging vessels and terminals as needed.

Current life cycle preservation activities do not address the replacement of assets as they reach the end of their service life.

- Replacement of certain existing terminals and vessels is essential to maintaining current operating service into the future.
- New vessel and terminal construction takes many years to accomplish. In order to have new replacement vessels ready when needed, the state would need to launch the eight-year vessel procurement process during the 01-03 biennium. Major terminal construction takes even longer.

Catching up and keeping up with ferry and terminal preservation and maintenance needs means:

- Raising the condition rating for category 1 capital systems to between 90% and 100% by 2011. Currently those systems are at an 82% condition rating.
- Maintaining category 2 systems condition ratings in the 60% to 80% range by the 2011 planning period.



# Exhibit 27: What Needs to Be Funded, by Biennium and Cumulative

(Year of Expenditure Dollars, in Millions)

Biennium	Capital Funds Only			Total Funds	
	Sources of Capital Funds	Uses of Funds	Capital Balance	Excess Subsidy from Operations	Capital Balance
2005-07	\$291.2	\$291.2	\$0.0	\$0.0	\$0.0
2007-09	491.2	569.7	(78.5)	4.5	(74.1)
2009-11	382.4	422.6	(40.1)	15.3	(24.8)
2011-13	210.7	330.8	(120.1)	34.6	(85.5)
2013-15	256.5	450.6	(194.1)	53.5	(140.6)
2015-17	253.5	431.6	(178.1)	65.4	(112.8)
2017-19	260.6	260.9	(0.3)	70.7	70.4
2019-21	310.0	359.9	(49.8)	88.3	38.5
2021-23	227.5	290.0	(62.5)	91.4	28.9
2023-25	287.7	493.5	(205.9)	79.7	(126.2)
2025-27	359.4	665.8	(306.4)	106.5	(199.9)
2027-29	446.5	546.3	(99.8)	140.5	40.7
2029-31	492.6	493.0	(0.4)	175.1	174.6
<b>Total 2005-31</b>	<b>\$4,269.7</b>	<b>\$5,605.9</b>	<b>(\$1,336.2)</b>	<b>\$925.5</b>	<b>(\$410.7)</b>

Source: Washington State Ferries and Berk & Associates, 2006

Considering all of the reasonably assumed available sources of capital funding, there will be a need for additional financial support over the planning horizon. As shown in Exhibit 26, there is a capital funding shortfall of approximately \$410.7 million over the life of the Plan.

It is important to note that this funding shortfall is above and beyond both excess subsidies from operations and significant appropriations from the Motor Vehicle Account to fund preservation needs at the JTFF-recommended funding level. The total discretionary Motor Vehicle Account funding for preservation is assumed to be \$2.5 billion over the next 25 years.

Combining the \$925.5 million of excess subsidies with the preservation investments from the Motor Vehicle Account results in a total of almost \$3.5 billion of the total capital funding need of \$5.6 billion that is assumed to come from sources other than dedicated ferry taxes.

Adding the \$410.7 million of unfunded capital needs, brings the total to almost \$4 billion, or 70% of the capital funding needs that are dependent on future Legislative or Commission actions.

Exhibit 28 presents a detailed projection of sources and uses of funds for WSF operating and capital programs to support the proposed Draft Plan. As shown in the table, the two separate ferry programs begin to be linked starting in the 2007-09 state fiscal biennium, when excess operating subsidies are projected to become available for capital funding purposes.

Exhibit 28: WSF Sources and Uses of Funds (Year of Expenditure Dollars, in Millions)

millions of dollars		2005-07	2007-09	2009-11	2011-13	2013-15	2015-17	2017-19	2019-21	2021-23	2023-25	2025-27	2027-29	2029-31	Total 2005-31
<b>Operating Program</b>															
<b>Sources of Funds</b>															
Farebox Revenue *		287.4	317.6	343.7	380.1	439.5	511.4	563.6	613.8	659.3	718.3	777.1	840.7	918.6	7,371.0
Miscellaneous Revenue (Concessions, etc)		6.6	8.1	8.7	9.3	9.9	10.5	11.4	12.5	13.5	14.5	15.6	16.7	18.0	155.2
<b>Total Operating Revenues Generated</b>		<b>294.0</b>	<b>325.7</b>	<b>352.4</b>	<b>389.5</b>	<b>449.3</b>	<b>521.9</b>	<b>575.0</b>	<b>626.2</b>	<b>672.8</b>	<b>732.8</b>	<b>792.6</b>	<b>857.4</b>	<b>936.6</b>	<b>7,526.2</b>
<b>Uses of Funds</b>															
<b>Vessel Costs</b>															
Deck Labor Cost		82.7	87.3	94.7	102.6	114.8	132.5	146.2	158.4	170.4	190.3	200.7	210.0	222.8	1,913.4
Engine Labor Cost (excl. maintenance)		55.3	57.8	62.4	67.3	75.3	87.6	96.9	103.3	111.3	125.4	130.9	136.8	145.2	1,255.5
Fuel Cost **		72.6	69.1	66.4	63.3	67.2	75.0	79.6	81.9	88.4	98.8	101.3	102.1	107.7	1,073.2
Other non-labor Cost		15.9	16.6	17.7	19.1	22.0	25.8	28.4	30.3	32.6	36.6	39.0	41.4	43.9	369.4
<b>Total Vessel Costs</b>		<b>226.5</b>	<b>230.7</b>	<b>241.1</b>	<b>252.3</b>	<b>279.4</b>	<b>320.9</b>	<b>351.1</b>	<b>373.9</b>	<b>402.6</b>	<b>451.0</b>	<b>471.9</b>	<b>490.3</b>	<b>519.6</b>	<b>4,611.5</b>
Terminal Costs		52.8	55.2	58.9	63.2	71.5	81.7	88.5	94.2	100.7	109.8	116.8	123.9	131.5	1,148.8
Vessel Maintenance Costs		32.6	31.6	33.6	34.8	35.2	35.8	41.0	43.2	46.9	51.8	54.5	57.8	61.3	560.0
Management & Support Costs		64.7	65.9	69.2	72.7	80.1	91.0	99.7	106.1	114.2	127.1	133.5	139.4	147.8	1,311.4
<b>Total Uses of Funds</b>		<b>376.7</b>	<b>383.4</b>	<b>402.8</b>	<b>423.0</b>	<b>466.2</b>	<b>529.4</b>	<b>580.4</b>	<b>617.4</b>	<b>664.3</b>	<b>739.7</b>	<b>776.7</b>	<b>811.5</b>	<b>860.2</b>	<b>7,631.6</b>
<b>Subsidy Required/Operating Surplus</b>		<b>(82.7)</b>	<b>(57.7)</b>	<b>(50.4)</b>	<b>(33.5)</b>	<b>(16.9)</b>	<b>(7.5)</b>	<b>(5.4)</b>	<b>8.9</b>	<b>8.4</b>	<b>(7.0)</b>	<b>15.9</b>	<b>45.9</b>	<b>76.4</b>	<b>(105.5)</b>
State Taxes, Fees and Other Revenue		50.3	54.1	56.5	58.6	60.6	62.8	65.8	68.9	72.2	75.6	79.2	83.0	86.9	874.5
Capron Transfer Funds		3.0	8.0	9.2	9.6	9.8	10.0	10.3	10.5	10.8	11.0	11.3	11.6	11.8	127.0
Taxes and Fees Transferred from Motor Vehicle Account		19.1													19.1
Fund Balance		0.4													0.4
Multimodal Taxes and Fees		9.9													9.9
<b>Presumed Level of Subsidy Under Current Legal Arrangements for Ferry Operations</b>		<b>82.7</b>	<b>62.1</b>	<b>65.7</b>	<b>68.2</b>	<b>70.4</b>	<b>72.9</b>	<b>76.1</b>	<b>79.5</b>	<b>83.0</b>	<b>86.7</b>	<b>90.5</b>	<b>94.5</b>	<b>98.7</b>	<b>1,030.9</b>
<b>Additional Operating Subsidy Needed</b>		<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
<b>Presumed Net Subsidy Available for Capital</b>		<b>0.0</b>	<b>4.5</b>	<b>15.3</b>	<b>34.6</b>	<b>53.5</b>	<b>65.4</b>	<b>70.7</b>	<b>88.3</b>	<b>91.4</b>	<b>79.7</b>	<b>106.5</b>	<b>140.5</b>	<b>175.1</b>	<b>925.5</b>
<b>Farebox Recovery (incl. Misc. Revenue)</b>		<b>78.0%</b>	<b>85.0%</b>	<b>87.5%</b>	<b>92.1%</b>	<b>96.4%</b>	<b>98.6%</b>	<b>99.1%</b>	<b>101.4%</b>	<b>101.3%</b>	<b>99.1%</b>	<b>102.1%</b>	<b>105.7%</b>	<b>108.9%</b>	<b>98.6%</b>
<b>Capital Program</b>															
<b>Sources of Funds</b>															
State Taxes and Fees for Ferry Capital: ***		36.0	38.3	40.3	41.9	43.4	45.1	46.9	48.8	50.8	52.8	54.9	57.1	59.4	615.6
State Distribution of Gas Tax		14.6	3.1												17.7
Fund Balance		77.8	132.5	152.8	126.1	132.0	149.2	182.6	230.2	145.7	203.9	273.5	358.4	402.2	2,567.0
Taxes and Fees Transferred from the Motor Vehicle Account		3.0	2.3	4.0	1.8	1.5									12.6
Multimodal Taxes and Fees		35.0	98.3	27.4	3.9	0.0									164.6
State Revenue from 2003 Transportation Account		0.0	1.9	79.8	6.0	48.6	28.2								164.5
State Revenue from 2005 Transportation Partnership Account		166.4	276.5	304.2	179.7	225.5	222.5	229.6	279.0	196.5	256.7	328.4	415.5	461.6	3,542.0
Total State Taxes and Fees for Ferry Capital		0.0	4.5	15.3	34.6	53.5	65.4	70.7	88.3	91.4	79.7	106.5	140.5	175.1	925.5
Presumed Net Subsidy Available		51.2	168.8	47.3	0.0	0.0									265.3
Bond Proceeds (R-49 & Multimodal GO)		73.6	47.9	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	462.5
<b>Total Sources of Funds</b>		<b>291.2</b>	<b>495.7</b>	<b>397.7</b>	<b>245.3</b>	<b>310.0</b>	<b>318.9</b>	<b>331.2</b>	<b>398.4</b>	<b>318.9</b>	<b>367.3</b>	<b>465.9</b>	<b>587.0</b>	<b>667.7</b>	<b>5,195.2</b>
<b>Uses of Funds</b>															
Debt Service		39.6	38.5	33.1	32.6	32.4	32.2	31.8	28.5	17.8	1.5				287.9
Emergency Repairs		4.0	6.0	6.5	7.0	7.5	8.0	8.6	9.2	10.0	10.8	11.8	12.8	14.0	116.2
Terminal Preservation		77.2	116.1	95.3	121.8	79.2	89.3	68.6	75.0	54.3	93.3	140.2	100.2	91.8	1,202.2
Terminal Improvements		64.1	143.6	206.2	76.0	95.2	26.8	0.3	0.3	0.3	0.4	0.4	0.4	0.4	614.4
Vessel Preservation		105.9	198.0	81.5	86.2	140.4	95.7	151.6	197.3	163.4	286.1	475.1	432.9	386.8	2,801.0
Vessel Improvements		0.3	67.6	0.0	7.3	95.9	179.5	0.0	49.5	44.2	101.4	38.4	0.0	0.0	584.1
Total Capital Projects		251.6	531.3	389.5	298.2	418.2	399.4	229.1	331.4	272.2	492.0	665.8	546.3	493.0	5,318.0
<b>Total Uses of Funds</b>		<b>291.2</b>	<b>569.7</b>	<b>422.6</b>	<b>330.8</b>	<b>450.6</b>	<b>431.6</b>	<b>260.9</b>	<b>359.9</b>	<b>290.0</b>	<b>493.5</b>	<b>665.8</b>	<b>546.3</b>	<b>493.0</b>	<b>5,605.9</b>
<b>Capital Fund Balance (Capital Sources Minus Uses)</b>		<b>0.0</b>	<b>(74.1)</b>	<b>(24.8)</b>	<b>(85.5)</b>	<b>(140.6)</b>	<b>(112.8)</b>	<b>70.4</b>	<b>38.5</b>	<b>28.9</b>	<b>(126.2)</b>	<b>(199.9)</b>	<b>40.7</b>	<b>174.6</b>	<b>(410.7)</b>

\* Ferry fees are assumed to be increased at 2.5% each May beginning in 2007.  
 \*\* Fuel costs assumption is based on February 2006 forecast.  
 \*\*\* Total State Funds are assumed to cover routine preservation of vessels and terminals (including emergency repairs) and debt service.  
 The difference between the basic preservation plus debt service and dedicated gas tax distributions is assumed to be covered by the discretionary appropriations from Motor Vehicle Account.

Source: Washington State Ferries and Berk & Associates, 2006







## 9 POLICY IMPLICATIONS

This is a Draft Plan and, as such, it is subject to public and stakeholder review and comment. A key objective of this review process is to not only solicit feedback on the content of the plan, but also on the policy assumptions and implications. In fact, given the current uncertainties surrounding ferry service, the policy feedback is perhaps more critical to the eventual long-term success of Washington State Ferries.

Perhaps the most significant policy issue facing WSF is the search for consensus regarding a secure, reliable, long-term funding solution. Since the loss of MVET, there is much less predictability about future ferry funding and much debate about distribution of cost responsibility among state and regional taxpayers and customers.

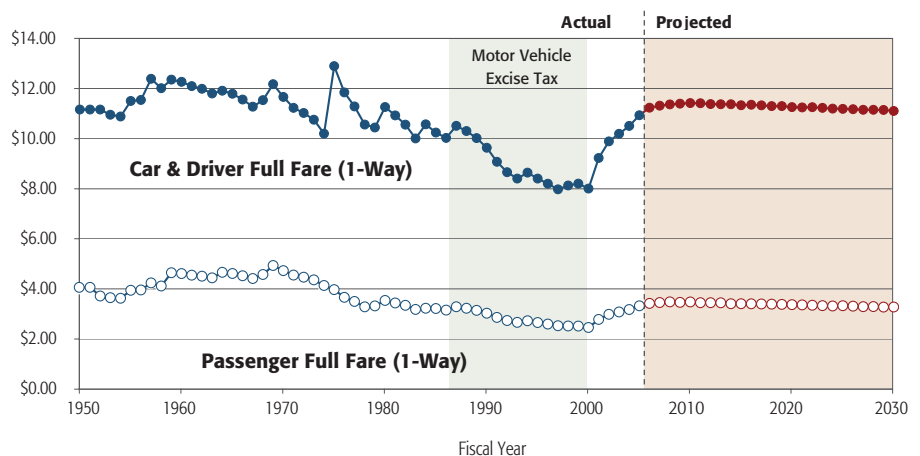
Other significant policy issues that have been raised during the development of the Draft Plan include: long-term ability to meet demand within the current operating paradigm; policies regarding moving vehicles or passengers; Colman Dock expansion and downtown waterfront plans; and the future role of passenger-only ferries in cross-Sound travel.

### 9.1 What are the policy implications of the funding framework for ferry services?

As discussed earlier, there are a number of key policy assumptions that underlie the funding implications of the Draft Plan. The most significant among these is also a key element of the draft funding plan, namely that fares will continue to be increased annually at the rate of 2.5% so long as there are operating or capital funding needs.

The result of these policy assumptions is that fare levels will remain close to today's level in real (inflation-adjusted) terms. Exhibit 29 presents historic and projected fares for Central Sound car & driver and passenger full fare categories. As shown, fare levels are assumed to remain roughly constant in inflation-adjusted terms throughout the planning period.

**Exhibit 29: Historical Fares Adjusted for Inflation (\$2006)**



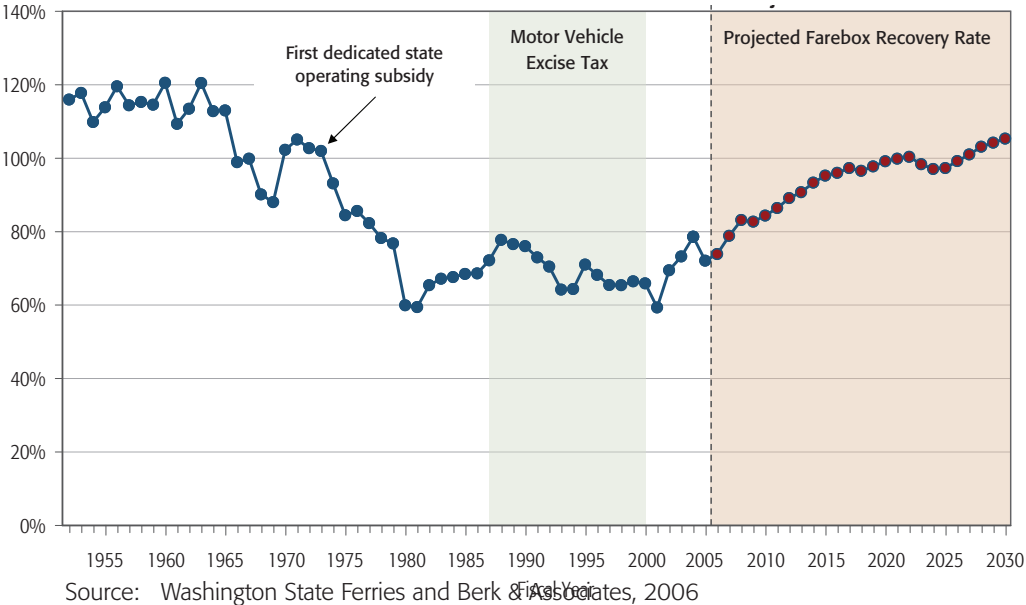
Source: Washington State Ferries and Berk & Associates, 2006



The other significant policy implication of the fare policy assumption is the impact on farebox recovery rates. As a result of following the fare policy and with ridership projected to grow substantially, cost recovery rates steadily increase until they begin to exceed 100% systemwide in 2022.

As shown in Exhibit 30, these rates of farebox recovery are substantially higher than at any time since 1970. In fact, the assumptions that underlie the Draft Plan would take WSF funding policies, in terms of the role of fares in overall funding, back to those in place from 1952 to 1970.

**Exhibit 30: Historical WSF Farebox Recovery Rate**



## 9.2 How would the funding implications change if farebox recovery were limited to 80%?

After Initiative 695 and the loss of WSF’s MVET revenue, two groups were formed to determine how much revenue WSF should seek from the farebox in order to recoup its MVET losses. Both groups (the Legislative Joint Task Force on Ferries and a Governor’s Blue Ribbon Commission) settled on an 80% farebox recovery rate as a minimum goal for WSF.

This 80%/20% split of cost responsibility for operations between the customer and the taxpayer is frequently considered to be the appropriate balance for WSF. Therefore, many stakeholders believe that an 80% farebox recovery rate should not be a minimum target, but should simply be the target rate of recovery each year.

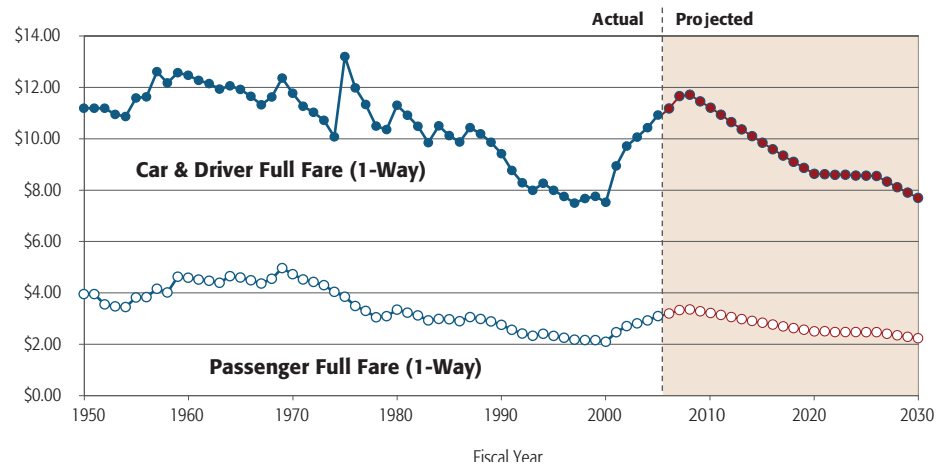
## 9.2.1 How would Fares Change to Maintain an 80% Farebox Recovery Rate?

In order to reach an 80% recovery rate, WSF would need to continue its planned fare increases through 2008. Because ridership is expected to increase substantially between 2009 and 2021, WSF could hold fares flat during that time period and still achieve recovery rates of 80%-85%.

Between 2021 and 2026, WSF would need to again increase fares at a 2.5% rate, and from 2027 to 2030, WSF could again hold fares flat.

As shown in Exhibit 31, a result of these fare policy changes would be a return to the historically low inflation-adjusted fare levels which coincide with the WSF MVET-revenue years.

**Exhibit 31: Real Fares (\$2006) Holding Farebox Recovery Rate at 80%**

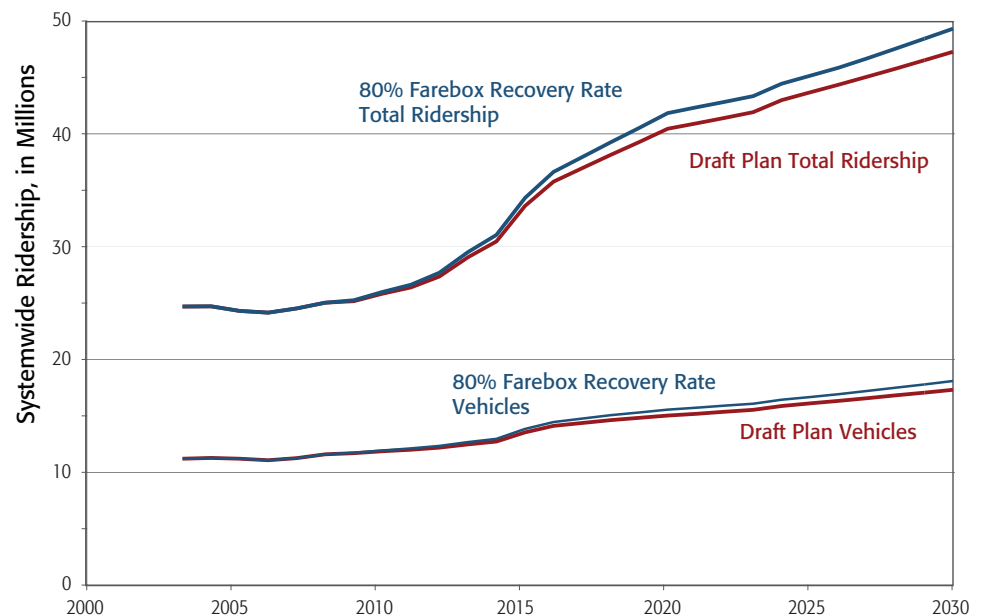


Source: Washington State Ferries and Berk & Associates, 2006

## 9.2.2 How would lower fares impact ridership?

Ridership on WSF is sensitive to fares. Therefore, under the fare assumptions described above, ridership would be greater than under the Draft Plan, because fares would be lower. As shown in Exhibit 32, by 2030, total ridership would be 49.5 million, 2.1 million (4.4%) greater than Draft Plan ridership.

**Exhibit 32: Ridership under the Draft Plan Scenario vs. 80% Farebox Recovery**



Source: Washington State Ferries and Berk & Associates, 2006



### 9.2.3 How would increased ridership affect congestion levels?

Assuming no change to the Draft Service Plan, this increased ridership would negatively impact the congestion levels. Average wait times for vehicles in 2030 would increase by as much as 13%-41% over the Draft Plan on some routes. Routes whose vehicle wait times already exceed Commission standards under the Draft Plan would exceed those standards by even larger amounts.

Peak-of-the-peak passenger demand on Seattle-Bainbridge (2,466) would nearly reach the rated capacity of a Jumbo Mark II vessel (2,500). While holding farebox recovery rates to 80% would not push any routes' peak-of-the-peak passenger demand over rated capacities, all vessels on all routes would be more crowded, with some routes approaching demand equivalent to seated capacities of the assigned vessels.

### 9.2.4 What are the capital plan implications of increased congestion?

Were WSF to hold farebox recovery rates to 80%, the decreasing level-of-service would necessitate conversations about large capital investments to better meet the increased demand.

Because the Draft Plan already contains the maximum number of vessels possible in the Kitsap travel shed under current operating paradigms (the area where average wait-times exceed LOS standards), the only way to improve the level of service would be to build larger vessels.

To maintain currently proposed headways with larger vessels, WSF would need to load vessels on more than one deck, which would necessitate development of double-decker vessels and loading facilities, plus much larger holding areas at terminals such as Colman Dock and across Kitsap County.

WSF would also need to consider the impact of increased vehicle traffic on roadways in Seattle, on SR-305 on Bainbridge Island, the street system in downtown Seattle and on other roadways in Kitsap County.

### 9.2.5 What impact would 80% farebox recovery have on state subsidy requirements?

Under the Draft Plan, WSF is assumed to be able to use excess operating subsidies to fund some of its capital funding needs. Under a plan that holds farebox revenues to 80% of operating costs, those excess operating subsidies would disappear, leaving an additional \$925 million gap in capital funding.

Not only would WSF lose a significant portion of its assumed capital funding, but the capital needs would likely increase, as described above. Therefore, a plan to hold revenues at 80% farebox recovery would require a substantial additional

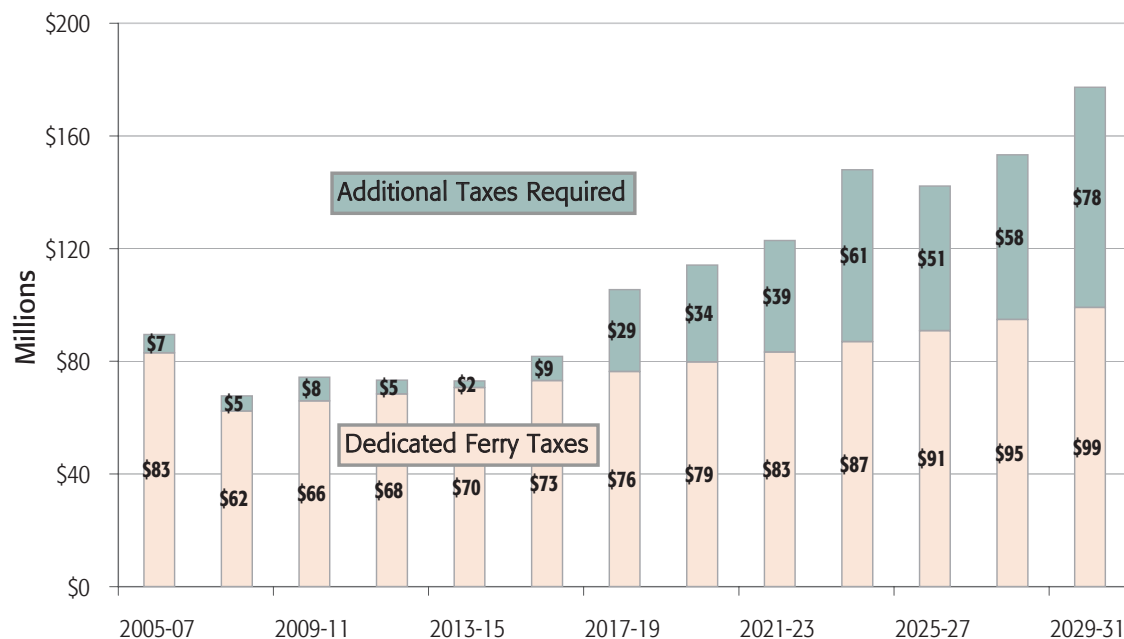
commitment of capital funding from the legislature, likely in excess of the \$1 billion in lost excess subsidies.

Limiting fares to 80% would also have an operating funding impact. Currently, dedicated ferry taxes make up approximately 15% of operating costs. Since most of the dedicated ferry taxes come from the gas tax and the gas tax grows less than inflation, dedicated ferry taxes are projected to grow more slowly than operating costs. A scenario that limits fare revenue to 80% of operating costs would require additional tax subsidy, as the dedicated ferry taxes would not be sufficient to fund the state's 20% balance in the operating program.

Exhibit 33 presents the estimated subsidy requirements if operating revenues (fare revenues plus concessions and miscellaneous revenues) were limited to 80% of operating costs. The chart shows both the dedicated ferry taxes plus the portion that would need to be funded by the Legislature to make up the difference and support the full 20% subsidy level at the Draft Plan level of service. The total additional subsidy need beyond the dedicated ferry taxes is estimated to be \$388 million.

If farebox revenues alone were to account for the 80% share of operating costs, then the projected \$155 million in total concession and miscellaneous revenue would reduce the additional subsidy required to approximately \$233 million.

**Exhibit 33: Total Subsidy Required for Operations with 80% Limit on Farebox Recovery** (Year of Expenditure Dollars, in Millions)



Source: Washington State Ferries and Berk & Associates, 2006



### 9.3 Limits on Future Expansion

The Draft Plan proposes expansion of WSF service throughout the system, and for many corridors and terminals, the Plan represents the maximum amount of service that can be realized under current terminal and vessel paradigms. Even with maximum service, some routes in the Kitsap travel shed are projected to exceed their stated LOS standards by 2030. On these routes (Seattle-Bainbridge, Seattle-Bremerton), congestion and average wait time will continue to grow, pushing the routes further past their WSTC standards.

Towards the end of the planning horizon, WSF faces a choice: either maintain current service paradigms, accepting that LOS standards may be exceeded past 2030, or change the service paradigms in one or more of the following ways:

**Loading paradigm changes.** Multiple terminals and vessels could be remodeled to allow double-decker loading to improve throughput capacity. This would allow for vessels with larger capacities to be able to maintain today's loading time, adding capacity to the system. This would have significant terminal development implications and require much larger holding areas.

**Address landside constraints.** WSF faces multiple constraining factors on land, including the size of Colman Dock, the impact of Colman Dock on the City of Seattle, the size of Fauntleroy Terminal, and the size of SR-305 on Bainbridge Island.

While this Draft Plan proposes two-vessel service on Seattle-Bainbridge and Seattle-Southworth, WSF could potentially serve each of those routes with three vessels. However, adding that much service would require large capital investments to further remodel Colman Dock and to expand SR-305 on Bainbridge Island. Even with these changes however, the Seattle-Bainbridge route would face navigational challenges that could limit a three-vessel operation to good weather months.

**Build new terminals and/or start new routes.** To move significantly beyond the service level proposed in the Draft Plan would likely require the construction of new terminals, potentially on both sides of Puget Sound, and possibly in conjunction with introduction of new routes. New terminals could potentially reduce congestion through Colman Dock and spread the flow of traffic across more corridors in the Puget Sound region.

### 9.4 Colman Dock Expansion and the Seattle Waterfront

The Draft Plan proposes to meet the needs presented by growth in the South Sound by breaking up the Fauntleroy-Southworth-Vashon triangle service and bringing the Southworth traffic to Colman Dock. The result is that the Fauntleroy terminal would exclusively serve Vashon Island and would be able to deal with growth demands for the foreseeable future.



While this solution solves a significant transportation and neighborhood impact problem in the Fauntleroy neighborhood, it does increase the challenges facing the redevelopment of Colman Dock. To implement this solution, three passenger-vehicle routes would operate out of downtown Seattle, increasing the holding area needs at the terminal and the total traffic flow impacts on waterfront streets.

The Draft Plan attempts to meet the needs of its customers within the overall constraints of the supporting infrastructure. The Plan limits growth at Colman Dock by limiting the number of vessels on Colman-served routes and spacing arrivals such that no two ferries should arrive at the same time. The effect of these limits is that overall congestion levels on the Seattle-Bainbridge and Seattle-Bremerton routes are marginally higher than the Commission adopted maximum standards.

The City of Seattle has expressed concern over the number of vehicles coming downtown via ferries. Combining the growth on Bainbridge and Bremerton with the new traffic from a Seattle-Southworth route would add more riders to the waterfront. Total westbound ridership through Colman Dock during an average weekday afternoon commute period is expected to increase from approximately 7,500 in 2003 to 19,500 in 2030. The distribution of these trips in 2030 among the three routes is projected to be:

- Total trips: 50% to Bainbridge Island, 30% to Bremerton and 20% to Southworth.
- Total vehicle trips: 42% to Bainbridge Island, 36% to Bremerton and 22% to Southworth.

However, of those 12,000 additional riders, 70% are projected to access via the walk-on mode, shifting the overall share of walk-on passengers through Colman Dock from 60% in 2003 to 67% by 2030. Even with this significant walk-on share, total vehicles are expected to increase by an average of 550 per hour during the peak period. Arrivals at Colman Dock during the PM peak hour would increase by 822 by 2030.

If Colman Dock is to be the future home of a passenger-only terminal for services offered by non-WSF operators, the number of walk-on trips in 2030 during the peak period is projected to increase by another 500 for a Seattle-Vashon route and 4,150 for a Seattle-Kingston route.

There are difficult policy questions to be resolved regarding the best overall mix of service levels, acceptable levels of congestion delay, infrastructure investment and neighborhood impacts. All of these issues come to the forefront at Colman Dock.



## **9.5 Future Role of Passenger-Only Ferries**

As per the clear Legislative direction offered during the 2006 legislative session, the Draft Plan assumes that WSF is completely out of the passenger-only business by July 2007. Seattle-Vashon POF is assumed to be transferred to another operator by then and the Plan involves no further WSF investments in passenger-only services.

The Plan does rely on a future passenger-only service in the Seattle-Kingston corridor to draw enough passenger demand away from the Seattle-Bainbridge route to meet the Commission standard of no walk-on overloads during an average PM commute period.

To draw enough traffic to a Seattle-Kingston route, there would need to be a significant amount of service added (20 minute headways) and reasonable fare levels (no more than two times the Seattle-Bainbridge passenger fare). Given that another operator would be responsible for delivering this service, there is a risk that there would be no Seattle-Kingston passenger-only route, or that such a service would be smaller and not draw enough traffic.

This poses potential planning challenges for WSF. The alternative to a substantial Seattle-Kingston service is either significant investment needs at the Seattle-Bainbridge route (which would likely require expansion of passenger capacities on the Jumbo Mark II vessels beyond the current rated capacity of 2,500) or a diminution of the Commission congestion standard.

As a result, there is a question as to what the appropriate policies might need to be to ensure that the necessary POF services are delivered in a timely manner and consistent with the assumptions in the Draft Plan.

## **9.6 Moving People Versus Moving Vehicles**

Washington State Ferries is an integral part of the State Highway system and in some areas (the San Juan Islands) the only state highway serving a community. As such, WSF has a responsibility to ensure an adequate level of overall mobility, including addressing congestion on its route structure.

As with the rest of the highway system and the broader transportation system, there are tensions in terms of how priorities should be established regarding moving people versus moving vehicles. This is a particularly significant issue for this Plan, as most of the pressure to expand services is coming from growth in vehicles. There are two principal policy areas where issues of people versus vehicles arise: (1) the Commission congestion standards; and, (2) fare policies. Both of these policy areas are subject to review as part of this planning process.

**Congestion Standards.** The Draft Plan makes the assumption that the current policy in both of these areas should continue throughout the planning horizon. In the case of the congestion standards, walk-on passengers are already treated in a more favorable way. With a 0-boat-wait standard on all routes, service additions are triggered when an average weekday commute results in walk-on overload situations. In contrast all routes allow a measure of in-vehicle wait time, in some cases as much as 100 minutes, before service additions are triggered.

One way to reduce the demand for expanded ferry services would be to relax the Commission congestion standards for vehicles. Not only would this push service triggers further into the future, but it would also increase congestion and possibly lead to higher levels of walk-on traffic.

**Fare Policies.** The only fare adjustments made in the Draft Plan are to increase the overall level of fares. In the current structure car & driver fares are generally 3.5 times higher than passenger fares. Also, oversize and undersized vehicles (motorcycles) pay in proportion to the space they use on the ferry. The Draft Plan assumes the current fare structure continues into the future, so these ratios would be maintained.

An option that would reduce the demand for vehicles and possibly improve the mode shift on ferry routes would be to make vehicle fares relatively more costly than passenger fares over time. The Tariff Policy Committee (TPC), an advisory committee to the Transportation Commission, has periodically reviewed this issue.

Each time the TPC has discussed the relationship between passenger and vehicle fares there has been significant policy tension between the desire for fare affordability and the desire to promote walk-on use of the system. Increasing vehicle fares more than passenger fares has generally been rejected because of affordability concerns. Conversely, suggestions to lower the passenger fare have been rejected because of the fact that ferry passenger fares are already lower than many transit fares in the region and any lost revenue would need to be made up from other fare categories.

